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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,870	08/22/2003	Narendra Digamber Joshi	129969	1869

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HASSE GUTTAG & NESBITT LLC
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MASON, OH 45040

EXAMINER

GIBSON, ERIC M

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 08/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/604,870

Applicant(s)

JOSHI ET AL.

Examiner

Eric M. Gibson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-29 is/are rejected.
- 7) ☒ Claim(s) 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/30/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/14/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The IDS filed 2/14/2005 has been considered and an initialed copy is included with this Office Action (see attached). Reference US004280185A (Martin) has been crossed off because it has already been included on an Examiner's PTO-892. Reference US005608845A has been changed to correctly indicate the inventor's last name, rather than first name.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-10, 12, 14-17 and 19-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin (US004280185A) in view of Muehl et al. (US20040024501A1).

a. Per claim 1, Martin teaches an apparatus for recording, storing, updating, and retrieving operating, maintenance and repair information relating to individual

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components of turbine engines, including at least one information storage device permanently deployed on at least one individual component (64, figure 1), identification information about the engine component (30-35, figure 1), at least one data register having data storage capabilities referenced by stored identification information of at least one part and a parameter (column 8, lines 17-21), wherein the information storage device is accessible for retrieving recorded and stored information (column 4, lines 37-42). Martin does not explicitly teach that the one individual component identifies the at least one part of the entire engine. However, Martin does explicitly teach that the storage devices include information on the individual engine modules as discussed at column 3, lines 38-58. Muehl teaches individual component tagging of engine parts for maintenance related reasons. Muehl does explicitly teach identifying at least one part of a component of an engine with upgradeable data storage registers that specifically store identification information about an individual part of the larger component (page 3, [0030]-[0034]). Furthermore, the motivation for Muehl to individually identify at least one part of the engine component is the same as the motivation to identify the individual engine modules by identification in the Martin system, namely to improve maintenance of complex systems such as engine turbines. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to store identification information about an individual part of the larger component in the system of Martin, as taught by Muehl, in order to improve maintenance of the engine as contemplated by both Martin and Muehl.

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- b. Per claim 2, Martin teaches that the information is updated by an engine control system (column 4, lines 8-13).
- c. Per claim 3, Martin teaches periodically storing the data (column 2, lines 10-15).
- d. Per claim 4, Martin teaches recording the "on-time" of a component, which necessarily includes updating when the component is stopped to compute the time (column 8, lines 13-16).
- e. Per claim 5, Martin teaches adding to the storage device (column 8, lines 17-18).
- f. Per claim 6, Martin teaches storing information over the life of the component (column 8, lines 17-21).
- g. Per claim 7, Martin teaches storing the information permanently (column 8, lines 17-21).
- h. Per claim 8, Martin teaches storing information over the life of the component (column 8, lines 17-21).
- i. Per claims 9 and 10, Martin teaches that the LTU can be mounted on the engine (column 3, lines 45-46).
- j. Per claim 12, Martin teaches anti-tampering measures (column 8, lines 30-32).
- k. Per claim 14, Martin teaches that the information storage device can be mounted on the engine (column 3, lines 45-46).

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l. Per claim 15, Martin teaches that the information storage device can be mounted off the engine (column 3, lines 45-46).

m. Per claims 16 and 17, Martin teaches that the storage device can be located off the engine (column 3, lines 45-46).

n. Per claim 19, Martin teaches that the storage device can be queried by an outside unit (column 4, lines 40-42), where the data can be used by people to ensure that contractual obligations are met.

o. Per claim 20, Martin teaches an apparatus for electronically recording, storing, updating, and retrieving operating, maintenance and repair information relating to individual components of turbine engines, including at least one information storage device permanently deployed on at least one individual component (64, figure 1), identification information of at least one life limited part of the engine component (30-35, figure 1), at least one data register having data storage capabilities for life limited parts referenced by stored identification information of at least one life limited part and a parameter (column 8, lines 17-21), wherein the information storage device is accessible for retrieving recorded and stored information (column 4, lines 37-42). Martin does not explicitly teach that the one individual component identifies the at least one part of the entire engine and that the data register is upgradeable. However, Martin does explicitly teach that the storage devices include information on the individual engine modules as discussed at column 3, lines 38-58. Muehl teaches individual component tagging of engine parts for maintenance related reasons. Muehl does explicitly teach identifying at least one part of a component of an engine with upgradeable data storage registers that

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specifically store identification information about an individual part of the larger component (page 3, [0030]-[0034]). Furthermore, the motivation for Muehl to individually identify at least one part of the engine component is the same as the motivation to identify the individual engine modules by identification in the Martin system, namely to improve maintenance of complex systems such as engine turbines. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to store identification information about an individual part of the larger component in the system of Martin, as taught by Muehl, in order to improve maintenance of the engine as contemplated by both Martin and Muehl.

p. Per claim 21, Martin teaches storing the information permanently (column 8, lines 17-21).

q. Per claim 22, Martin teaches periodically storing the data (column 2, lines 10-15).

r. Per claim 23, Martin teaches recording the "on-time" of a component, which necessarily includes updating when the component is stopped to compute the time (column 8, lines 13-16).

s. Per claim 24, Martin teaches a method for recording, storing, updating, and retrieving operating, maintenance and repair information relating to individual components of turbine engines, including providing at least one information storage device permanently deployed on at least one individual component (64, figure 1), storing identification information about at least one part of the engine component (30-35, figure 1), providing at least one data register having data storage capabilities and

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referencing each data register with stored identification information of at least one part and a parameter (column 8, lines 17-21), and retrieving recorded and stored information (column 4, lines 37-42). Martin does not explicitly teach that the one individual component identifies the at least one part of the entire engine and that the data register is upgradeable. However, Martin does explicitly teach that the storage devices include information on the individual engine modules as discussed at column 3, lines 38-58.

Muehl teaches individual component tagging of engine parts for maintenance related reasons. Muehl does explicitly teach identifying at least one part of a component of an engine with upgradeable data storage registers that specifically store identification information about an individual part of the larger component (page 3, [0030]-[0034]) and that the data register is upgradeable (page 4-5, [0049]). Furthermore, the motivation for Muehl to individually identify at least one part of the engine component is the same as the motivation to identify the individual engine modules by identification in the Martin system, namely to improve maintenance of complex systems such as engine turbines. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to store identification information about an individual part of the larger component in the system of Martin, as taught by Muehl, in order to improve maintenance of the engine as contemplated by both Martin and Muehl.

t. Per claim 25, Martin teaches periodically storing the data (column 2, lines 10-15).

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u. Per claim 26, Martin teaches recording the "on-time" of a component, which necessarily includes updating when the component is stopped to compute the time (column 8, lines 13-16).

v. Per claim 27, Martin teaches a method for electronically recording, storing, updating, and retrieving operating, maintenance and repair information relating to individual components of turbine engines, including providing at least one information storage device permanently deployed on at least one individual component (64, figure 1), storing identification information of at least one life limited part of the engine component (30-35, figure 1), providing at least one data register having data storage capabilities for life limited parts and referencing each data register with stored identification information of at least one life limited part and a parameter (column 8, lines 17-21), and retrieving recorded and stored information (column 4, lines 37-42). Martin does not explicitly teach that the one individual component identifies the at least one part of the entire engine and that the data register is upgradeable. However, Martin does explicitly teach that the storage devices include information on the individual engine modules as discussed at column 3, lines 38-58. Muehl teaches individual component tagging of engine parts for maintenance related reasons. Muehl does explicitly teach identifying at least one part of a component of an engine with upgradeable data storage registers that specifically store identification information about an individual part of the larger component (page 3, [0030]-[0034]) and that the data register is upgradeable (page 4-5, [0049]). Furthermore, the motivation for Muehl to individually identify at least one part of the engine component is the same as the

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motivation to identify the individual engine modules by identification in the Martin system, namely to improve maintenance of complex systems such as engine turbines. Therefore, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to store identification information about an individual part of the larger component in the system of Martin, as taught by Muehl, in order to improve maintenance of the engine as contemplated by both Martin and Muehl.

w. Per claim 28, Martin teaches periodically storing the data (column 2, lines 10-15).

x. Per claim 29, Martin teaches storing information over the life of the component (column 8, lines 17-21).

3. Claims 11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin in view of Vogan et al. (US005968107A).

a. Per claims 11 and 18, Martin teaches the invention as explained in the rejection of claims 1 and 10. Martin does not teach predicting future maintenance requirements from the data. In the field of diagnostic and maintenance data gathering, parameter trending of engine or other components is commonly known and used. One such system is disclosed by Vogan. Vogan teaches using the stored data from a component to predict the future maintenance requirements of that component before a failure occurs, in order to minimize downtime or repair time of the component (column 1, lines 57-67). It would have been obvious to one of ordinary skill in the art, at the time of invention, to use the stored parameter information in the system of Martin to predict

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future maintenance requirements, as component trending is well known and practiced in the art, as evidenced by Vogan.

Allowable Subject Matter

4. Claim 13 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

a. Per claim 13, the prior art does not teach or reasonably suggest in combination the apparatus for recording, storing, updating, and retrieving operating, maintenance and repair information relating to individual components of turbine engines, including that maintenance activity must be recorded in the information storage device when maintenance is done for the engine to operate as claimed.

Response to Arguments

5. Applicant's arguments, see pages 9-13 of the reply, filed 3/30/2005, with respect to the rejection of claims 1-12 and 14-29 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Muehl.

6. The Examiner agrees with the applicant that the teaching of Martin contains no explicit mention that the engine module identifiers contain specific part information, however, one could reasonably infer that the engine "module" identifiers taught by Martin are conceptually the same as the applicant's claimed identification of at least one

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part of the component. However, because anticipation requires the presence of every claimed element and the inference is not adamantly clear from the four corners of the reference, the Examiner withdraws the rejection under 35 USC 102. However, the claimed apparatus wherein at least one part of the component is identified in the memory is reasonably obvious to one of ordinary skill in the art from the teaching of Muehl as explained in the above rejections. Muehl does explicitly teach that the parts are identified in the components of the overall engine. Therefore, the claims are now rejected as obvious under 35 USC 103 as detailed above.

Conclusion

7. The references made of record and not relied upon are considered pertinent to applicant's disclosure. Muehl et al. (US006859757B2) teaches complex article tagging with maintenance related information.

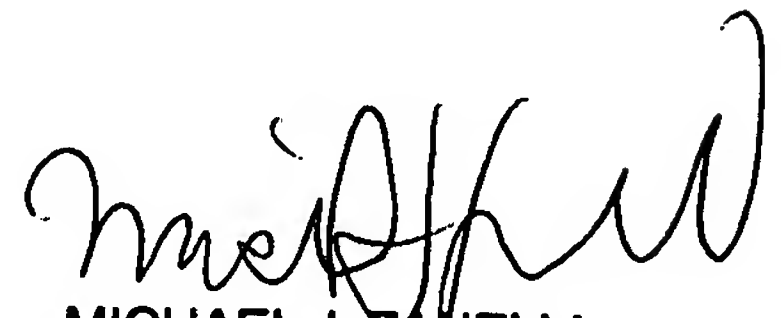
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric M. Gibson whose telephone number is (571) 272-6960. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EMG



MICHAEL J. ZANELLI
PRIMARY EXAMINER